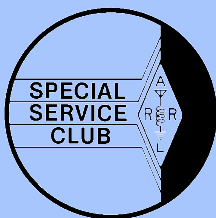




The Raleigh Amateur Radio Society's **EXCITER**

GET INVOLVED

- RARS General Membership meeting: Second Tuesday of the month.
- The RARS net meets every night except Saturday @ 8 p.m. on 146.640.
- The RARS Technical & Trader's net: Saturdays @ 8:00 PM on 146.64.
- RARS meets for a monthly dinner on the First Tuesday of each month.



PUBLIC SERVICE EVENTS

Interested in helping? Visit
<https://www.rars.org/public-service.php>

frequently for our 2021
ham public service
schedule.

RARS General Meeting

Main Topic: RARS Officers induction
& Meteor Scatter

By: Zach Thompson, KM4BLG

Date: December 14, 2021

Time: Meeting at 7:30 PM, informal
gathering at 7PM on Zoom.

Where: Zoom

RARS Net Monthly Summary

RARS nets, November 2021

497 checkins

939 minutes

Julie Royster KT4JR

RARS net manager

RARS Officers

PRESIDENT

John Honeycutt
N8ZU
919.417.2477
jfh49@bellsouth.net

VICE PRESIDENT

Tom Lewis
N4TL
N4TL2@yahoo.com

SECRETARY

Mark Kilmer
KM4JRH
919.676.0110
mark.kilmer@gmail.com

TREASURER

Greg Seamster
KE4PAX
919.859.0029
KE4PAX@arrl.net



The Raleigh Amateur Radio Society

The Raleigh Amateur Radio Society, Inc. (RARS) was founded in 1969 and continues to serve and support the amateur radio community in the greater Triangle area. In 1999, the society incorporated a new RARS and obtained 501(c)(3) non-profit tax status.

The objectives of the club are to promote worldwide friendship through amateur radio; to be of public service by providing radio communications in times of disaster, emergency, or civic needs; to educate members in radio technique, and to provide training classes to assist in obtaining amateur radio licenses.

Anyone interested in amateur radio is eligible to apply for membership. Dues for regular licensed amateurs are \$18 per year (from July 1 through June 30). Additional immediate family members pay \$5 each per year. Dues for licensed amateurs older than 59 or younger than 16 are \$12 per year. Dues for non-licensed associate members are \$9 per year. Applications for membership may be obtained from the treasurer or on the RARS website.

<https://www.rars.org>

Exciter

The Exciter is the official newsletter of the Raleigh Amateur Radio Society. It appears each month as a PDF on the RARS website at www.rars.org. Members receive email notification when the latest version is available. Please provide your email address to the Treasurer.

The Exciter welcomes articles, advertisements, and other contributions. To submit a piece to the newsletter, please contact the Editor. The Editor reserves the right to edit any and all pieces. The submission deadline for each month's Exciter is the Saturday that is ten days before the general meeting. All submissions must be final. Drafts are not accepted.

The views expressed in the Exciter are those of the individual authors and do not necessarily reflect the views of the Editor or RARS.

Tom Lewis, N4TL, editor (editor@rars.org)

Presidents Message

These two years of my first term as president have been an unusual time, since we were prevented from having most in-person activities because of COVID restrictions. We have managed to hold fairly normal meetings on Zoom with interesting programs, though most of us have surely missed seeing each other for in-person rag-chews. The educational sessions for new Hams organized by Tadd Torborg, KA2DEW on meeting nights have also been greatly missed.

Attendance at Zoom meetings is holding fairly steady and may even have increased some at times. A benefit of on-line meetings is that we see some members who can't normally attend in person because they are on the road or don't live near Raleigh, or who can't make the drive for one reason or another.

At most of our monthly meetings, the board considers when to resume meeting in person. Up to now, we have been prevented by city/county/state restrictions on indoor gatherings, or by conditions from the church where we meet. We still discuss the issue at most board meetings, so please bear with us. In person meetings will resume when practical.

In June we had Field Day at the Carroll farm. It was a great success. The ARRL just published the list of scores, and RARS scored 2nd in the USA in the 6A category, among 30 entries. Congratulations to Field Day Chair Curt Phillips W4CP and the other volunteer leaders of the event, Bob Conder K4RLC, Dale W4AUV, Carl Davis W8WZ, David Burt W4OFO, Rich Mitchell NC4EN, Mark Kilmer KM4JRH, Tadd Torborg KA2DEW, James Marolda KE4DRN, Ken McEwen KI4OTO, John Brier KG4AKV, Nancy Torborg KB2TNR, and David Burt W4OFO for their great leadership and great operating skill.

When you join RARS or renew your membership, the application form asks for some information about your interests. That information goes into a member profile, which can be updated whenever you wish. If you are like me, you haven't updated it for a while. You can update your member profile with your current interests by logging into the "Members Only" section at [www.RARS.org](https://www.rars.org).

OK, it's true, I haven't completed the New Year resolutions I wrote about last January. I decided on a EFHW antenna to hang and built the matching transformer from a kit, but don't have it hung on a tree yet. And I'm still working on learning Morse code well enough to make my first CW contact by the end of 2021. I've been working pretty diligently, but it has been way harder to learn than I thought it would be. I still have a few weeks to make a very slow speed contact with another patient RARS member. Don't count me out, but don't hold your breath either.

December is when we celebrate the 52nd birthday of RARS along with Christmas, New Year, and other religious and secular holidays. I hope you enjoy this special time.

73, John Honeycutt N8ZU

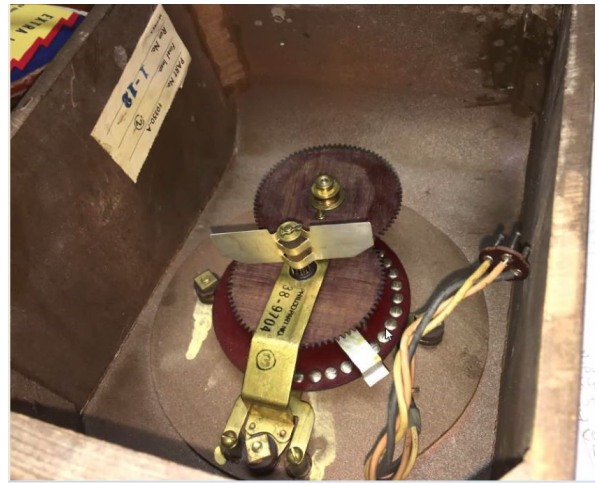
November 9 , 2021 RARS meeting

The meeting was held on Zoom, as we have been since the covid-19 pandemic started. Many members connected from 7PM on. President John Honeycutt, N8ZU, ran the formal part of the meeting. See the meeting minutes on [page 30](#) for details. After the formal part of the meeting. Tom, N4TL. Asked members who will be doing a show and tell.

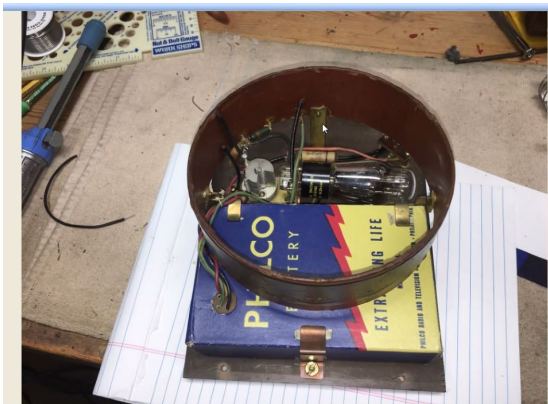
John Honeycutt, N8ZU did the first show and tell. John restored a 1930s Philco remote control for a radio



Philco remote control



Bottom view



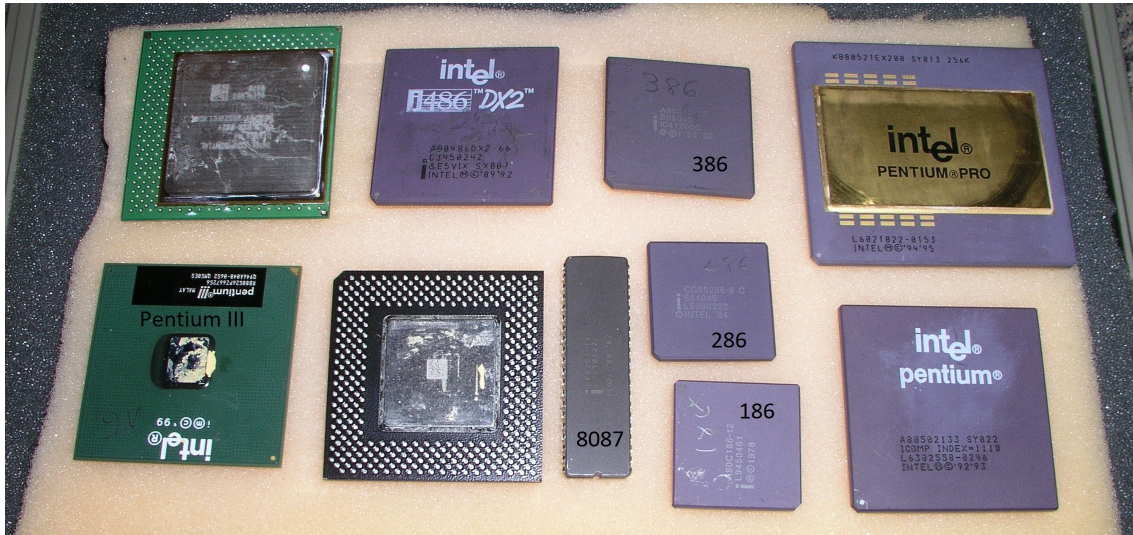
Battery and tube



Putting a new capacitor inside an old one

October 12 , 2021 RARS meeting presentation

Tom N4TL did the second show and tell. He displayed his collection of CPUs and other ICs used in IBM computers.



The first IBM PC used the 8088 CPU
Not shown above

The 8087 is a floating point coprocessor

The 486 has the coprocessor built in.
First one to have more than million transistors.



S3 Video chip came after IBMs VGA

October 12 , 2021 RARS meeting presentation continued

Joe Schroedl, KO4TCY. Spoke about a Solar powered car that he has worked on along with classmates at NC state. Link <https://www.solarpacknc.com/>



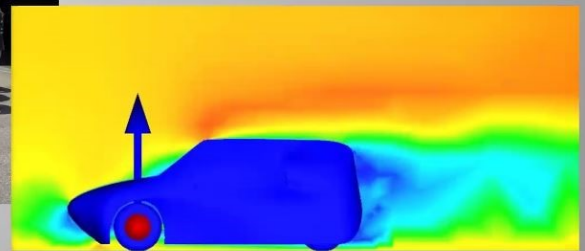
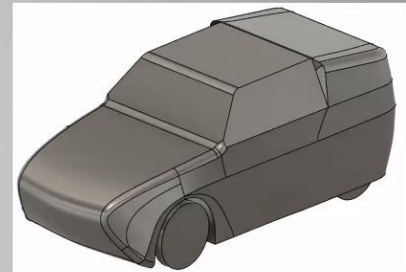
The past and the future

- Attend FSGP 2021
 - SPX
- Future races
 - FSGP 2022
 - ASC 2024
- Future designs



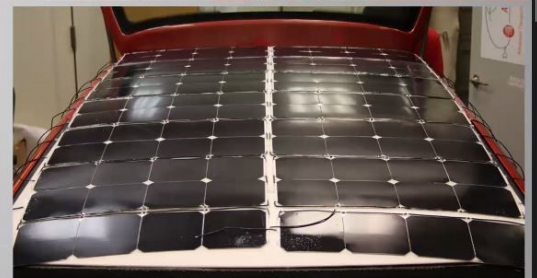
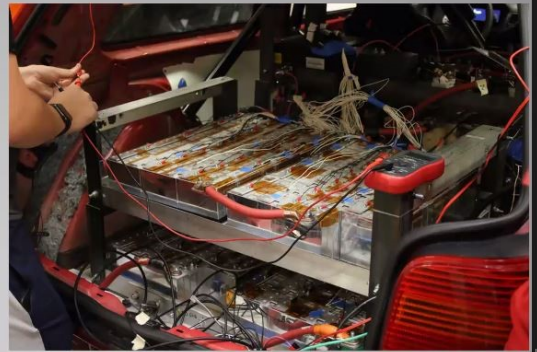
Aerodynamics Team

- Responsible for design, manufacturing and integration of outer shell of car
- Manufacture body panels using composite materials
- We will work closely with Structures!
- All skill levels are welcome



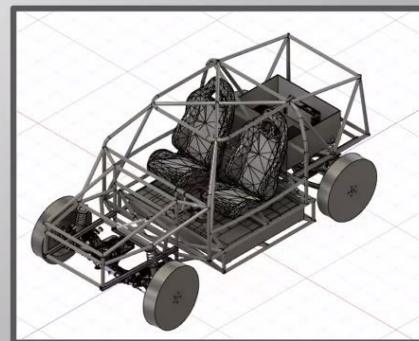
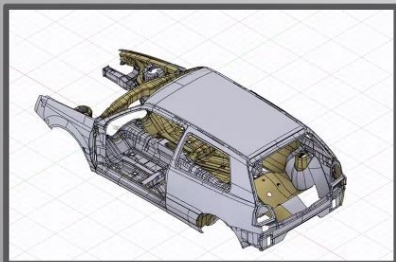
Electrical Team

- High Voltage
 - Running power from battery pack to the motor controller, then to the motor
 - Designing battery pack/BMS for new car
- Solar Array, MPPT
 - Make solar panels and use the MPPT to convert solar panel power to battery power
- Low Voltage
 - Power 12V accessories like lights, dash, etc.



Structures Team

- Design, testing, and manufacturing of a chassis, frame, and roll cage
- Design and manufacture an electrically isolating battery enclosure out of composites
- Optimization of designs based on weight savings



October 12 , 2021 RARS meeting presentation continued
















































The Battery



The Engine Bay



November 9 , 2021 RARS meeting

 Tom, N4TL, Raleigh	 Brian K4BMW Hillsborough	 Jim KM4WRK, Raleigh
 MARK - KM4JRH (Host)	 Carl Davis	 Jim W1XR
 John Honeycutt N8ZU	 Charles WB4DCM Raleigh	 Joe Schroedl KO4TCY
 Bob W4GIA	 Charles-WA4OSS	 John, NC4JP
 Bob. N4GEB	 Chuck-K4RGN	 Julie Gutasson, WE3T
 roger k4klk	 Cliff KA7NSU	 Ken, KI4OTO, Ral. NC
 Chuck, K4HF - Ral	 Curt W4CP	 KO4SKA - Wallace
 N4BJH Joe WakeForest	 Daryl KX4WY	 Lee N4WYE
 Tadd (KA2DEW) Torborg	 David K4DME	 Lowell K4EUP Wendell
 MEME KE4NGM	 dennis wz0q	 Richard K7RLH Apex
 AJ4YA Grady	 Denny KO4IBL	 Richard, N1FUA, Apex, NC
 Alan AB4OZ RALEIGH	 Doug AD4UL Melbourne, FL	 Robert Keys NA4G
 Bill, W3IMD	 Doug N3LTV Raleigh NC	 Steve W4MGT
 Bob K4RLC	 Ernie Bauer N4AEW	 Tom NC4TS, Lake Royale
 Bob W4TTX	 Jeremy K2HJX Raleigh	 Tyler KO4BZA
 Brantley K4CBW	 Jerry KE4TTS	

47 people attended the zoom meeting

44 are shown above

3 were missed with the screen captures

Future RARS Meeting Topics

Titles, topics, and speakers **subject to change.**

Date	Topic	Presenter
12/14/2021	RARS Officers induction & Meteor Scatter	Zach Thompson, KM4BLG Asheville, NC
1/11/2022	3D printing	Paul Holzworth KD4BFN
2/8/2022	The DSR Transceiver comes of age – a comparison: IC-7300 vs FTdx101D, plus Free Remote Station Operation	Gary Schwartz, K3OS of Hickory, NC

During the Zoom meetings please keep
your microphone muted.

Please edit your name so your
Name, Call and Location are shown.

The next few meeting of RARS will be held using Zoom at 7:30PM. Zoom is a conferencing application that runs on computers, tablets and phones. The meeting ID will be sent out to everyone via email.

Quick start guide for new Zoom users

https://support.zoom.us/hc/en-us/articles/360034967471-Quick-start-guide-for-new-users#h_b0c98dfa-d90f-486d-9617-71ab7b41a273

Zoom help center

<https://support.zoom.us/hc/en-us>

RARS Birthdays

Ken	AC1BX	12/01
Charley	KE4QBW	12/01
Rick	K4RLE	12/01
Smitty	K4ACS	12/02
Gary	KI4KKY	12/03
Walt	KO4LZZ	12/04
Glenn	KA4GLN	12/04
Chip	KN4LHD	12/05
Ronnie	W4RJF	12/06
Jen	KO4JRL	12/07
Neil	NR1Y	12/08
Frank	W4CWA	12/08
Bruce	KC4UQN	12/09
Virginia	NC4VA	12/09
Kenn	NE4Y	12/09
Mike	WA4BPJ	12/11
Frank	KA2FWC	12/12
Roger	KS4VX	12/12
Ham	KB4BR	12/12
Sam	KI4TRG	12/13
Chuck	KE4LYK	12/13
Ralph	KF4NIR	12/14
Conner	KE4ZNS	12/15
John	KM4MMA	12/16
Charles	KM4AMT	12/18
Mike	KN4GUN	12/19
Mike	KJ4ZPE	12/20
Ronald	KC4RB	12/21
Tyler	KN4CHG	12/24
John	KO4LDW	12/27
Mike	WD4MB	12/27
Darrell	W4CX	12/29
John	KO4HLP	12/30
Dick	KD4ISC	12/31
Bob	W4GIA	12/31

New Members

Roger Brower	N4KDD
Jack Coneybeer	K8TO



LIFE IS SIMPLE



Field Day 2021 Results

The digital edition of the December QST is out now (on the ARRL website), and therefore so are the 2021 FIELD DAY results. As shown in the screenshot included here, we finished NO. 2 in the nation in the 6A category, which encompassed 30 entries.

Despite COVID, the "rust" of a year away from Field Day, an injured new chairman (me) at the helm and other obstacles, RARS is STILL among the national leaders!

The Central Kentucky club which finished ahead of us did a great job and racked up a lot of points, but our point total would have still put us in second place in the categories with more stations than we had, including 7A, 8A, and all the other "A" categories with more stations.

So we made some noise nationally while still having a good time, some good food, a safe event and introducing some new hams (and non-hams) to Field Day among other things.

Thanks SO much to everyone who helped in a leadership position, and to everyone who participated in any capacity.

Special thanks from me to everyone who gave an extra effort to help me, since I was recovering from a broken bone in my back suffered during some Field Day prep a couple of weeks prior to the event.

RARS Field Day Leaders for 2021 include the following:

40 CW Bob Conder K4RLC & Dale W4AUV
20/80 CW plus Carl Davis W8WZ
80/15 phone David Burt W4OFO & Rich Mitchell NC4EN
20/10 phone Mark Kilmer KM4JRH
GOTA Tadd Torborg KA2DEW
Digital station James Marolda KE4DRN
Generators Ken McEwen KI4OTO
Satellite John Brier KG4AKV
Queen of Snacks Nancy Torborg KB2TNR

And special thanks to David Burt W4OFO, who was de facto Assistant Field Day Chairman, and all the more so because of my injury.

So we did well in 2021, but for 2022 we want to do more and better. More fun, more good food, more outreach to non-hams and inactive hams, continued safety, more contacts and another GREAT event.

And it will be our final Field Day at the beautiful Carroll farm, so we'll want a great Field Day to wrap that part of RARS Field Day history.

Field Day 2021 continued

Enjoy the holiday season basking in our 2021 accomplishments, and be ready for a new year and a new Field Day challenge!

As always, your input and suggestions are welcome.

Thanks again for your fine work.

73,
Curt Phillips W4CP
RARS Field Day Chairman 2021, 2022
curt@w4cp.com



6A					
Central Kentucky ARS					
AJ4A	3,528	2	52	11,798	KY
Raleigh ARS					
W4DW (+W4RNC)					
	1,955	2	50	7,350	NC
Lake Area Radio Klub					
W0WTN	1,534	2	28	6,542	SD
Panhandle ARC					
W5WX	1,608	2	52	6,464	WTX
Franklin Co. (NC) ARC					
AA4RV (+NY4NC)					
	1,521	2	25	5,504	NC

RARS Monthly Dinner, NEW LOCATION

All members and guests are welcome to the monthly (first Tuesday) RARS Supper, 6:30PM, at the CHOW Restaurant, 8311 Creedmoor Road, Raleigh. The restaurant is at the corner of Brennan Drive and Creedmoor Roads, behind McDonalds. After entering the restaurant, go to the left rear to the private room. Informal and Dutch, just bring your appetite and best rag to chew. "Your attendance will help us retain the private meeting room."

NC4JP

John W. Peterson

Nov 24, 2021

Personal Notes

Fletcher-Munson Receive Audio Compensation test,
Amateur Radio Service, using existing equipment.

Inspired by Bob Heil, K9EID.

Fig. 1 shows the Fletcher-Munson curves of human hearing:

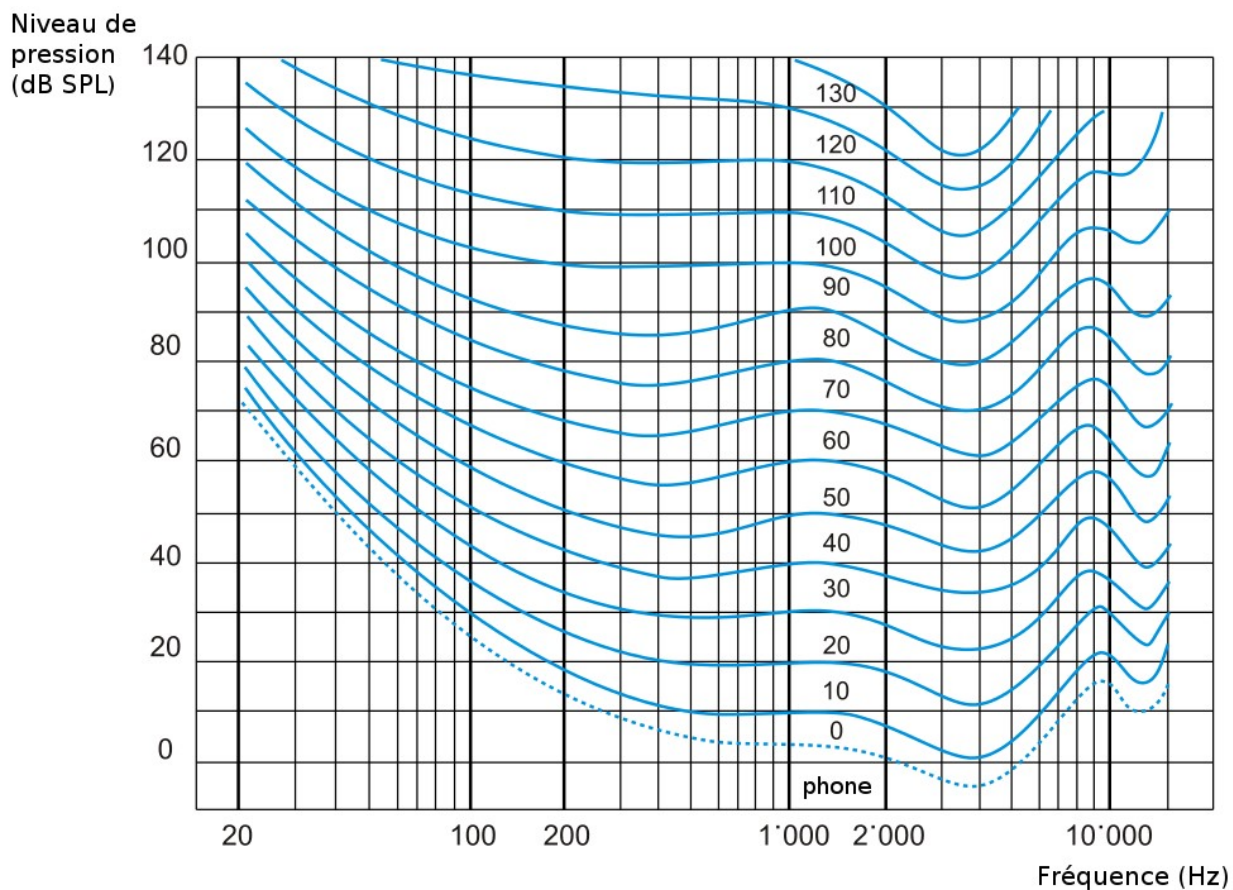


Fig. 1, Fletcher-Munson curves

Fletcher-Munson Receive Audio Compensation test, continued

This was a test to partially simulate Bob Heil's receive audio system to see if I could hear any worth-while results, potentially leading to a purchase of his system.

Although this is NOT an effort to create so-called "studio conditions" or "broadcast quality" in an Amateur Radio station, this information can, and should be, used in those efforts. All good recording studios take these ideas into consideration in their work. Even the simple phrase used in recording:

"Check it at all volume levels." ...Is a reference to the Fletcher-Munson curves.

In the Amateur Radio service we are primarily concerned with effective and reliable communications. If we can't understand each other, why bother?

Bob Heil makes a lot of references to the work of Fletcher and Munson at Bell Labs:

Fletcher and Munson

https://en.wikipedia.org/wiki/Equal-loudness_contour

<https://ledgernote.com/columns/mixing-mastering/fletcher-munson-curve/>

Bob Heil, K9EID

<https://www.qrz.com/db/k9eid/>

<https://heilhamradio.com/>

<https://heilhamradio.com/products/parametric-receive-audio-system/>

This test is only about receiver audio. The ultimate purpose is clarity of speech for reliable communications. I have taken the ideas presented by Bob Heil in his video presentations and tried to improve the receive audio in my radio shack, using my Yaesu FT450D transceiver for the test.

Bob Heil's receive audio system basically uses a parametric equalizer to provide a boost, adjustable in frequency and amplitude, with the optimum typically being about 2.5khz. So....

Fletcher-Munson Receive Audio Compensation test, continued

Since I already had a single-channel graphic equalizer available, I placed it in the speaker out line from the transceiver to its' pair of powered studio monitors. This particular graphic equalizer is much more than needed but It was already here and available. I first tried just installing a "peak" or "boost" at about 2.5khz at a level of +6db; This made a major improvement in receive clarity. I used this setup for about a month with excellent results.

I then dialed in the inverse of the entire "Fletcher-Munson" curve, within the range of 100hz to 6khz, using the 60db level, which is my typical shack audio level. The idea being to replicate the work of Fletcher and Munson as closely as possible. I honestly was not expecting much difference; BUT...!!! The improvement was immediately noticeable. It still has the improved clarity, but now with an over-all smoothness that is very nice to listen to for long periods of time.

An a/b test is very convincing.

Fig. 2 shows my attempt at extracting the single 60db line from the set of curves using real cutting and pasting with scissors and tape. The range from 100hz to 6khz provides three crossings of the 60db line that are useful as reference points when dialing-in the actual settings.

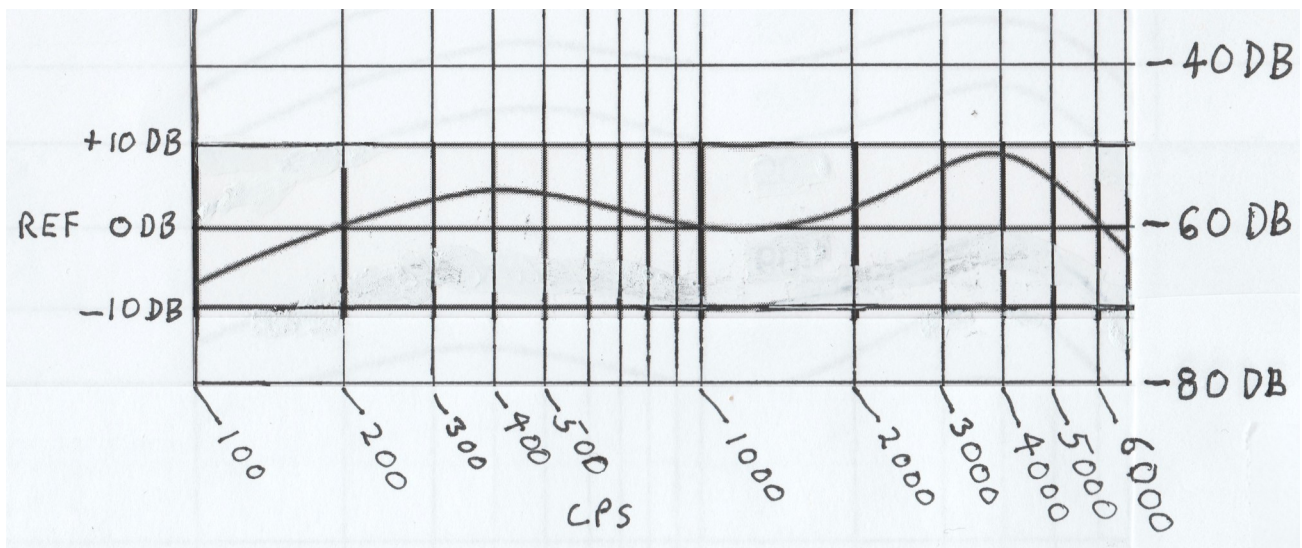


Fig. 2

The zero DB reference on the left side of the graph represents the normal un-equalized audio level going directly to the powered studio monitor speakers in my shack. The numbers on the right are from the original Fletcher-Munson graph. cps=hz...

Fletcher-Munson Receive Audio Compensation test, continued

Fig. 3 shows the settings used on the graphic equalizer. This should be exactly identical to the graph of Fig. 2. Pay attention to the DB levels marked on the graphic equalizer; in this case the markings are plus/minus 3, 6 and 12DB.

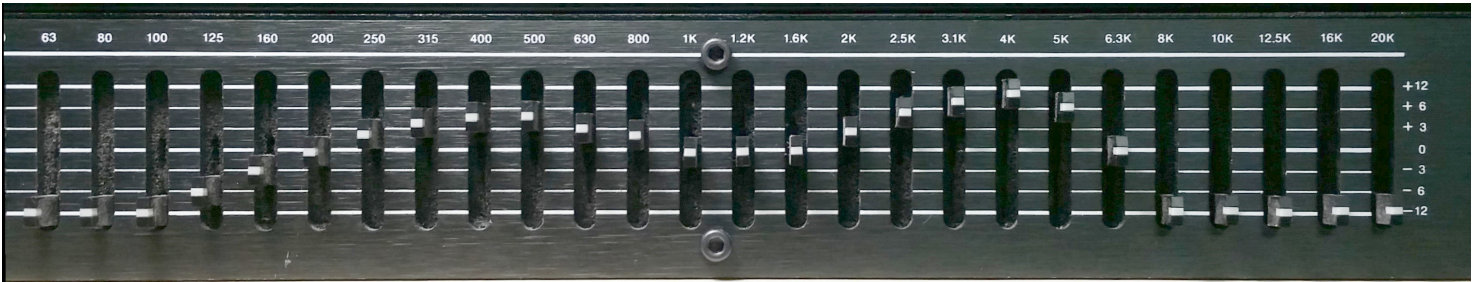
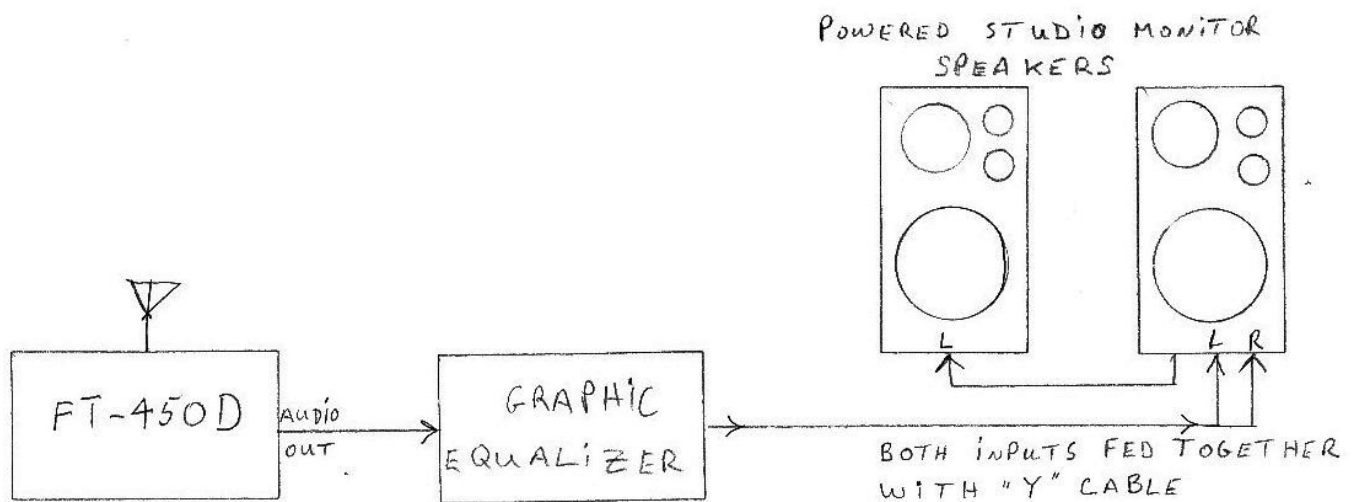


Fig. 3, graphic equalizer settings

This system is useable with headphones by plugging directly into the headphone connector on the powered studio monitor speakers.



RARS Membership links

Use the following link to verify / update your membership profile.

<https://www.rars.org/userprofile.php>

Use the following link to renew your membership.

https://www.rars.org/membership_renewal.php

HAM RADIO LUNCHEON

Everyone is welcome!

Every Thursday at 11:30 am

New York Diner, 909 McKnight Drive Knightdale.

Check the latest information on the AB4OZ QRZ entry.

[QRZ.COM](https://www.qrz.com).

Hamfest Calendar

For details go to <https://www.arrl.org/hamfests/search>

Free AB4OZ Hamfest, Weather permitting

The free AB4OZ HamFest will be Saturday, December 11 2021. Setup at 9AM. Start time is 10AM. New location, Golden Corral Restaurant rear parking lot. 3551 Grenelle street, Raleigh NC 27603.

Check the latest information here [QRZ.COM](https://www.qrz.com).

<https://www.rars.org>

Technical Answer: B. To interrupt power in case of overload.
General Answer: D. The direction of maximum radiated field strength from the antenna.

Upcoming Events

Dec 19	ARRL Rookie Roundup (CW) 6hr contest, 100W max. More info at https://www.arrl.org/rookie-roundup .
Dec 31	ARRL Scholarship applications due. Individual awards of \$500-\$25,000. \$900,000 total to be awarded. More info at https://www.arrl.org/scholarship-program .
Jan 8	ARRL Kids Day, More info at https://www.arrl.org/kids-day/ .
Jan 29-30	Winter Field Day More info at https://www.winterfieldday.com/ .
Feb 14-18	ARRL School Club Roundup Open to individuals, clubs, and school groups. More info at https://www.arrl.org/school-club-roundup .
Feb 27	NC QSO Party, More info at https://ncqsoparty.org/ .

PSE Send Us Photos!

Please send photos (with a caption) of youth "playing radio" to Brantley K4CBW (k4cbw@arrl.net) for inclusion in the Exciter. Whether operating, building, or otherwise assisting, we'd love to see youth in action!

Technician License Question

Here's a question that could appear on a Technician license exam.

What is the purpose of a fuse in an electrical circuit?

- A. To prevent power supply ripple from damaging a circuit
- B. To interrupt power in case of overload
- C. To limit current to prevent shocks
- D. All of these choices are correct

Find more questions at: https://hamexam.org/flash_cards/15-Technician

General License Question

Here's a question that could appear on a General license exam.

What is meant by the "main lobe" of a directive antenna?

- A. The magnitude of the maximum vertical angle of radiation
- B. The point of maximum current in a radiating antenna element
- C. The maximum voltage standing wave point on a radiating element
- D. The direction of maximum radiated field strength from the antenna

Find more questions at: <https://hamexam.org/exam/16-General>

Interesting information and items sent to the Exciter.

Photos from Stone Mountain Georgia Hamfest

From Tadd KA2DEW. <https://www.icloud.com/sharedalbum/#B1AGdFryYGNybUk>

Crystals

From the SFDXA reflector, K2WH, <http://nettyelectronics.com/>
Found this place by accident and it looks like it might be a good source for crystals.

Will, AA4NC

From Marc Sullivan, W4MPS. <https://youtu.be/CBb77jMzo3U>
Short video commemorating our friend Will, AA4NC

The Transatlantic Tests of 1921

From Brian, KN4R, Lots of interesting information on the 1921 tests.
<http://1bcg.org/1BCG/>
The article on the tests starts on page 17 of this magazine, Wireless age 1922.
<https://worldradiohistory.com/UK/Wireless-Age/Wireless-Age-1922-03.pdf>

What is AuxComm

<https://w4nc.com/auxcomm-what-is-it/>



ARRL 160 Meter Contest with an "80-10 meter Antenna"

Carl Davis, W8WZ

In June of 2020 I installed a new antenna at my home. I was looking for a single wire, multi-band HF antenna that could install easily on my city lot. I selected an antenna made my www.myantennas.com which is an end fed antenna that uses a 49:1 matching transformer. It uses 135 feet of wire, which is, of course, a half wave on 80 meters, a full wave on 40 meters, two waves on 20 meters, etc. The antenna shows a less than 2:1 SWR on all ham bands 80 to 10 except 30 meters. I installed it as an inverted L. The matching transformer (feed point) is on a wooden post about 4 feet above ground. The wire then goes 80 foot straight up to the branch of an oak tree. It goes over that branch at a 90 degree angle and then flat-top's for the remaining 55 feet (at an elevation of 80 feet above ground) from North to South, creating, in theory, East-West lobes. I feed this antenna using 150 feet of DX engineering brand equivalent of LMR 400 coax, most of which is buried in my yard. The base of the antenna is grounded to an 8 foot driven copper clad steel ground rod. That ground rod is bonded to my house ground via 100 feet of buried number 6 solid copper wire. I find this antenna to be wonderful. I routinely use it on all bands 80-10 for contesting, DXing, checking into nets, rag chewing, operating as K2J in the 13 Colonies on the Air event, and more. For an easy to install, single wire, 80 to 10 meter antenna it is very hard to beat.

However, this past weekend was the ARRL 160 meter contest and I wanted to participate. In my almost 30 years of being a ham, I haven't operated 160 meters. Mostly because I have never lived in a place where I was able to have a 160 meter antenna. I had tried to load 80 meter dipoles on 160, or tried to feed a short length of wire against ground as an end fed random wire, but I never got decent results. This year, thanks to my myantennas.com 8010 End Fed antenna, the situation was different. I was able to get on "top band" and do quite well.

The End Fed antenna, being a half wave on 80 meters, is by definition, a quarter wave on 160 meters. My choice to install the antenna in an inverted L configuration meant that I had a very traditional, even text book, 160 meter inverted L antenna, if I removed the radiator wire from the matching network and connected the center of my coax directly to that wire. That is exactly what I did. Since my antenna ground is bonded to my house ground via 100 feet of buried copper wire, I have, in effect, one radial for this inverted L. More radials would be better, but one is better than

ARRL 160 Meter Contest with an "80-10 meter Antenna" continued

none. I took an SO-239 panel mount connector from my junk box and soldered a few inches of hookup wire to the center pin. I put an alligator clip on the other end of the hookup wire and went out to the antenna. I connected the feedline to this SO-239 connector. I disconnected the antenna wire from the EFHW matching transformer and alligator clipped it to the new SO-239 connector's center pin hookup wire connection. I then used a second large alligator clip to clip that SO-239 connector, and the barrel of the feedline's PL-259 connector, to the ground wire. The antenna was now a 160 meter Inverted L with one radial. I went in the shack and checked the SWR. It showed 2:1 at 1.8Mc and went up to 3:1 towards 1.9Mc. The built in antenna tuner on my Yaesu FTDX10 was able to match the whole band and I was in business, running 100W.

I started by answering CQ's from strong stations. I got right through. In contests I prefer to run rather than search and pounce so I thought I would see how this antenna would perform. Would I have a loud enough signal to run? I hoped so, because I am lazy and don't like having to tune up and down the band all day. So I gave it a shot. After just a few calls, I had a pile up! In 2.5 hours I worked 200 stations. The best DX I got was the Isle of Man. The only other DX entity being the Bahamas. All of my other contacts were in the USA.

But it isn't only an exotic sounding DX call that makes a contest fun. I had some very fun contacts in that mix from other Americans. During a contest, one frequently works the calls of other testers and recognizes them as "familiar." These always bring a smile to the face. Being a regular participant in the CW Operator Club's weekly CWT (CW mini contest) each Wednesday, I have several stations I work each week. Each one brings a smile and I love when I work them outside of CWT as they feel like familiar old pals who it is nice to hear from. I worked many of them in this contest. Then I got a call from my friend and fellow Raleigh area ham, Tom N4TL who is not a regular CWT participant, but is the Vice President of the Raleigh Amateur Radio Society and the editor of our News Letter. That was special enough to cause me to go to the key to send "TU TOM" instead of just hitting the F3 Key to send "TU W8WZ". After that I got a call from a familiar call sign, WB8IMY. That is Steve Ford, the former editor of QST! Again, my hand went to the Begali to send "TU STEVE GL" instead of simply hitting the F3 Key. A few contacts later, my friend Josh W9HT called me from his home in Fort Wayne. Josh and I have been friends since we were both young hams in our 20's and I lived near him in the Hoosier state. These days (at least

ARRL 160 Meter Contest with an "80-10 meter Antenna" continued

pre-covid) we see each other annually at both Orlando Hamcation and the Dayton Hamvention, so hearing a call from him was especially nice. I followed that up with not only a "TU JOSH" but also a text message conversation on my cell phone as I continued to work the pile up. I also worked a local friend, Bob K4HA as well as another friend from Indiana, CW OPS newsletter editor, Tim K9WX and several more CWT regulars. More calls continued until it was time for me to go to bed, quite happy with the joy my simple wire had given me.

I am not really a serious contester as I can't give as much time to a contest as a serious contender does due to other demands on my time. I only worked for 2 hours on Saturday evening and a half hour before church on Sunday, but they were a fun 2.5 hours and added another 200 QSO's to the logbook – all thanks to being able to quickly, and easily, modify my antenna to work on 160 meters.

The Reverse Beacon Network showed my signal strength to be reasonably nice by the stations that picked me up, several reports were between 30 and 34 dB and the lowest one was 3 dB, but he still copied me. I was spotted all across the United States and the log book is full of stations, mostly from the Eastern Sea Board to the Mid-West, but there are some from the West Coast and the Deep South as well, in addition to the one hop across the pond to the Isle of Man.

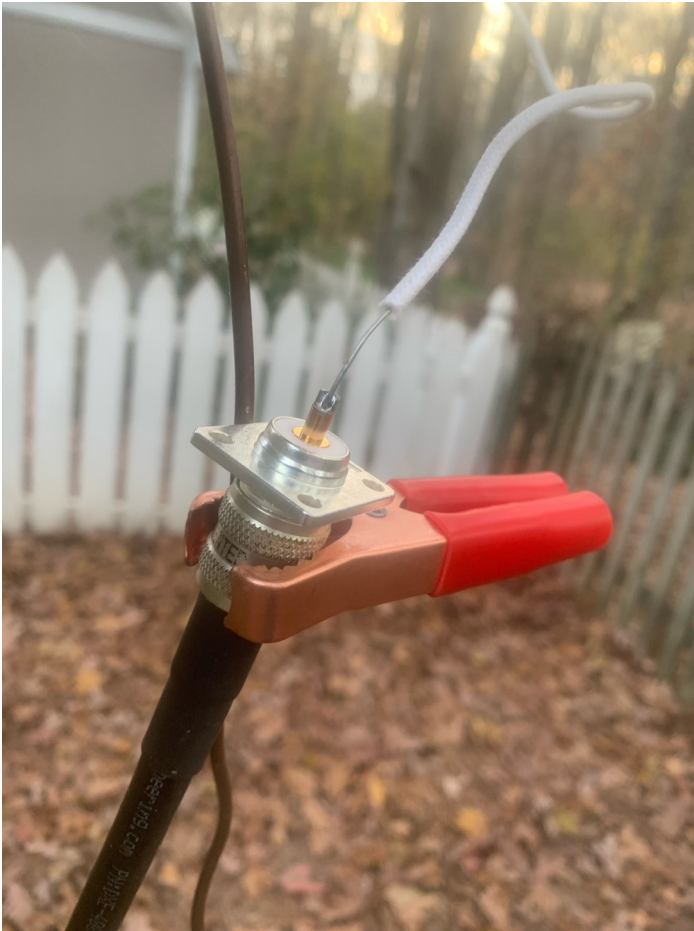
If you have, or are considering, an end fed half wave "80 to 10 meter" antenna system, know that you can make it work on 160 meters with a simple modification. This antenna then becomes a single wire solution for all bands 160 to 10 with good performance on all, which can make a December weekend, much more fun.

ARRL 160 Meter Contest with an "80-10 meter Antenna" continued



The coax feedline's center connector is connected to the antenna's 135 foot radiating wire using a jumper made with an SO-239 panel mount connector, some hookup wire, and an alligator clip. The shield side of the feedline is alligator clipped to the ground wire.

ARRL 160 Meter Contest with an "80-10 meter Antenna" continued



Close Up of connections.

RARS Classifieds

Copied from <https://www.rars.org/classifieds.php>

The items below were listed within the last 30 days on the RARS website.

Check the RARS Classified List on the RARS website regularly for new items.

Radio Shack TRS-80

Posted December 3rd, 2021 by: W4YDY

Contact: w4ydydave@suddenlink.net

For Sale: Radio Shack TRS-80 bought in 1978. Upgraded to 16k of memory, expansion interface with additional 32k of memory, 5 inch floppy drives, carrying cases. Make offer or will donate to a museum or collector if they want it. The Smithsonian in DC already has several. Will consider delivery within 100 miles of Pitt County, NC.

Email: w4ydydave@suddenlink.net for more info.

RigExpert AA-30 antenna analyzer, 0.1-30MHz

Posted November 30th, 2021 by: K4CBW

Contact: cbwest@gmail.com

RigExpert AA-30 antenna analyzer, good for dialing in HF antennas. I've used it to size dipoles, etc. Unit has a USB port, can be controlled via RigExpert software to generate plots. Clean unit, very good condition. \$100

More info at <https://rigexpert.com/products/antenna-analyzers/aa-30/>.

Kenwood TM-V71A Mobile radio, 2m/70cm, 50W

Posted November 24th, 2021 by: K4RLC

Contact: k4rlcc@hotmail.com

Kenwood TM-V71A Mobile radio, 2m/70cm, 50W

The TM-V71A is a true dual-band operation radio so VHF+VHF/VHF+UHF/UHF+UHF operation is possible. The detachable control head is easily connected with the optional remote cable.

Features

<https://www.rars.org>

RARS Classifieds continued

- High RF Power Output (50W)
 - 1,000 Multifunction Memory Channels
 - Dual Receive on Same Band (VxV, UxU)
 - EchoLink® MEMORY (Automatic Dialer)
- Brand new, in box, never opened - wife didn't want in her van...
-Asking \$335 (Paid \$425)
Bob K4RLC
-

For Sale: Hallicrafters SX-17

Posted November 22nd, 2021 by: W4BOH

Contact: infomet@embarqmail.com

This is a thoughtfully restored receiver that works well and looks good.

It's hot, with lots of RF gain at the front end.

AND the front panel is impressive, with many knobs and dial windows! Would look great in your next movie. I've made contacts with it and listened to quite a bit of shortwave broadcasting.

Picture available. Now \$175, but if you want to haggle it's \$225.

Pick up in Hillsborough.

Wilson W4BOH infomet@embarqmail.com

FREE: TV Converter Boxes

Posted November 22nd, 2021 by: W4BOH

Contact: infomet@embarqmail.com

Yep, they used to cost \$30-50, now free, picked up in Hillsborough or Morrisville.

OR I'll mail them to you for postage cost. Hey, they have excellent two wire line cords!

Wilson W4BOH infomet@embarqmail.com

RARS Classifieds continued

For Sale: James Millen 92200 Transmatch

Posted November 21st, 2021 by: W4BOH

Contact: infomet@embarqmail.com

A true classic, from the top quality James Millen Company.

VERY solidly built, as was all Millen equipment, since Milen was a ME.

The only tuner you'll see built on a solid copper chassis and in a copper case!

Here's the book: http://www.radiomanual.info/schemi/ACC_matching/Millen_92200_user.pdf

Note that this tuner is built to match to coax feedlines and does NOT include a balun for matching to balanced lines.

I'm helping a friend do some thinning and this is the first piece to come out.

\$225, picked up in Hillsborough or Morrisville.

Wilson W4BOH infomet@embarqmail.com

Midland HH54 Portable Emergency Weather Alert Radio

Posted November 19th, 2021 by: W4BRB

Contact: bernardb15@att.net

2 Radios - condition used - In good shape - working

Features include: Clock, Sleep Alarm, Weather Channel Selection, S.A.M.E. County Codes,

Select Alert Types (Display, Voice, Tone), Display shows Alphanumeric Alert Type

\$25.00 for the pair OBO

Thanks, Bernard

for sale

Posted November 18th, 2021 by: N4TL

Contact: n4tl2@yahoo.com

.Heathkit AR-1500 AM FM receiver with manual. Volume control has issues, using an external volume control. Works fine. \$50

Hallicrafters speaker, R-40A, \$50

RARS Classifieds continued

GE table radio, T1231, 6 tubes and 3 transistors, \$10
contact me via email 73 N4TL

PWRcrimp Crimping Tool (for Anderson PowerPole connectors) - New in Box

Posted November 13th, 2021 by: W4BRB

Contact: bernardb15@att.net

High performance tool for crimping 15, 30, and 45 Amp Anderson powerPole contacts. Ratcheted with contact positioner. Easy to use, with instructions. \$30.00

For additional information see: www.westmountainradio.com

Thanks, Bernard

Workgroup Switch / Ethernet Switch

Posted November 12th, 2021 by: W4BRB

Contact: bernardb15@att.net

Linksys 10/100 5-Port Workgroup Switch. Unopened. \$25.00 OBO

Netgear FS108 10/100 ProSafe 8 Port Fast Ethernet Switch. \$35.00 OBO

Thanks, Bernard

PolyPhasers - New

Posted November 12th, 2021 by: W4BRB

Contact: bernardb15@att.net

1 PolyPhaser IS-B50LN-C2-ME N type connectors 125 MHz - 1 GHz Never used \$25.00 OBO

1 Motorola/PolyPhaser RRX4024A SO239 connectors 50 MHz - 700 MHz Never used \$25.00 OBO

Thanks, Bernard

RARS Board Meeting Minutes, October 19, 2021

The board has not approved these minutes.

They will be published after they have been approved.

RARS Membership Meeting Minutes – November 9 , 2021

7 PM via Zoom

Call to Order: John Honeycutt

Pledge of Allegiance recited.

John invited guests, new members and those who had not attended a meeting recently to introduce themselves. He also invited those who had been recently licensed or had a license upgrade to introduce themselves as well.

We had two guests.

A quorum was present.

October minutes approved.

Officer Reports:

President - Next BoD meeting will be next Tuesday; also on Zoom. Contact John to get on the agenda.

Vice President - Next month's presentation will be about meteor scatter

Secretary - [No report.](#)

Treasurer - No report.

Repeater Chair - No report.

Exciter Editor – Doing well.

[Jump back to page 4](#)

RARS Membership Meeting Minutes – continued

Net Manager - No report.

The Public Service Director No report.

Field Day Chair - No report.

ARRL Liaison - No report.

Youth Director - Brantley West noted upcoming events youth events. He also mentioned the ARRL annual scholarship program.

At large director - Alan Pittegoft - No Report

At large director – Ken Latchum - No Report.

At large director – Tadd Torborg - No Report

Action Items

Chuck Littlewood announced the candidates for next years BoD and officers. Vote for nominees passed. [[see page 32 for the full list](#)]

Program

Tom Lewis introduced tonight's program, "Show and Tell". John Honeycutt (N8ZU), Tom Lewis (N4TL) and Joe Schroedl (KO4TCY, participated.

Additional Comments

Alan Pitegoft announced upcoming hamfests and a recurring, non-club sponsored Thursday lunch.

Ken, KI4OTL, asked about the SWL group. Curt Phillips responded with the group's meeting information.

The meeting adjourned at 9:13 PM Eastern Time.

Respectfully Submitted,

Mark Kilmer

RARS Secretary

RARS Membership Meeting Minutes – continued

2022 Nominations Committee Report / Recommendations

RARS Officers for a Two Term:

President: John Honeycutt, N8ZU

Secretary: Mark Kilmer, KM4JRH

Board Members for 1-year term:

Public Service Director,

Plus RARS Facebook;

RARS Exciter Editor:

RARS Net Manager;

Director at Large

Director at Large

Director at Large

FM Repeater Chair:

W4DW, W4RNC, N4RAL

Trustee coordinator:

ARRL Liaison:

RARS Education Director:

RARS Youth Director:

RARS Web Master:

RARS Food Service Chair:

RARS NC QSO Party Chair:

RARS 2022 Field Day Chair:

RARS Volunteer Exam Coordinators Liz, K04CK & Joe White, WA4GIR

Jeremy Lindsley, K2HJX

Tom Lewis, N4TL

Julia Royster, KT4JR

Alan Pitegoff, AB4OZ

Tadd Tolberg, KA2DEW

Ken Latchum, AD4GX

Chuck DeCourt, W3WZN

Carl Davis, W8WZ

Chuck Littlewood, K4HF

Carl Davis, W8WZ

Brantley West, K4CBW

Hank Montgomery, K4HM

Richard Kroeger, N1FUA

Marty Young, W4MY

Curt Phillips, W4CP

Submitted by Chuck Littlewood, K4HF

Nominating Committee Chair